CHAPTER III
EXTERNAL ASSESSMENT

The Purpose of an External Assessment

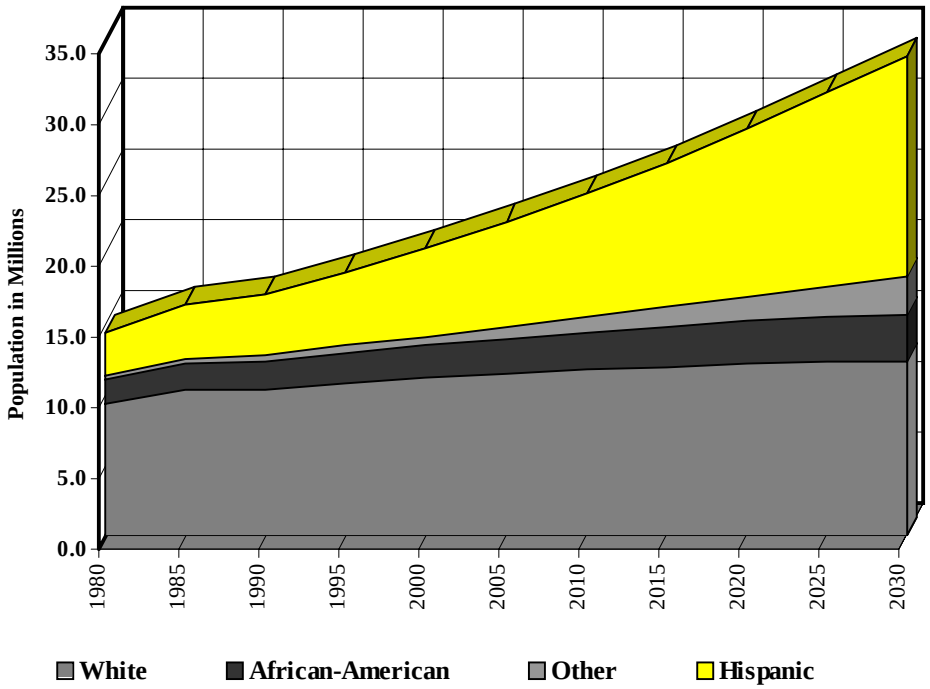
The Texas Department of Health (TDH) external assessment is a process used to identify issues critical to the future of our organization. Throughout this chapter we will look at the economic, social, political, technological and environmental changes taking place in public health and health care systems. These trends in the external environment will support and guide the development of agency goals, objectives and strategies. The success of public health efforts in Texas depends our on ability to predict, strategize around and impact the trends in the larger environment. Issues considered in the external environment include:

- Demographic trends
- Economic indicators
- Poverty in Texas
- New federalism
- Causes of death, disease trends and lifestyle risk factors
- Health care insurance
- Business trends in health care
- Rapid growth and advances in medical/health technology
- Health care workforce
- Bioterrorism

Demographic Trends

According to data from the U.S. Census Bureau, Texas has grown in population from 14.2 million in 1980 to an estimated 20 million in 1999, an increase of nearly 41 percent. Increased births and net migration are equally dominant factors driving Texas population growth. Between 1990 and 1999, Texas experienced a growth of 18 percent, with 58 percent of that change due to natural increase and the rest split almost evenly between domestic and international net migration.[1] Projections indicate continued growth of the racial/ethnic diversity of the state. Forecasts predict that by the year 2030 the Texas population will reach approximately 34 million. It is estimated that 46 percent of the year 2030 population will be Hispanic, 36 percent Non-Hispanic White, ten percent African American, and eight percent other, which is primarily Asian[2] (Figure 1).

Figure 1. Texas Population Growth Trend 1980 through 2030



Source: Texas Department of Health, Population Data Systems 2000 (Texas State Data Center).

Demographically, Texas' population is middle-aged, but not for long. The aging population (aged 60 plus) currently represents 14 percent of the state population and is the fastest growing segment of the population. By 2030, persons 60 years and older will constitute 17 percent of the state's population. Within the 60 plus population segment those 75 years and older form the fastest growing subgroup. In 1990, there were 718,000 persons 75 plus with an 81 percent increase projected by 1999. Nationally, Texas will displace New York as the third ranked state with the largest elderly population group and will maintain that position up to 2020 when the population of the elderly is projected to be 3.8 million.[3]

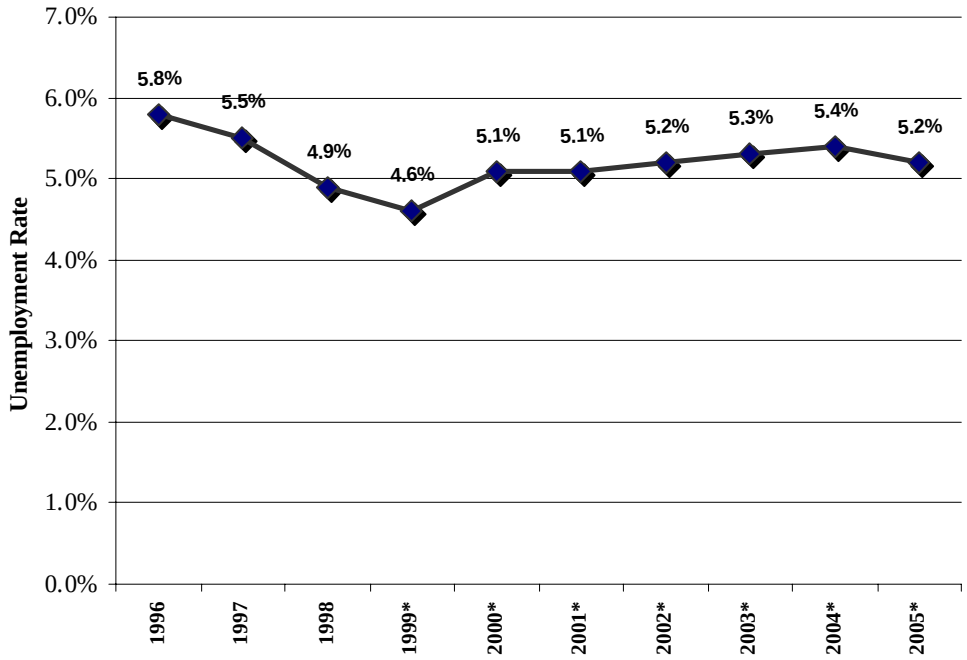
Economic Indicators

Current economic indicators provided by the Texas Comptroller of Public Accounts show that the Texas economy remains healthy and will continue its robust growth over the next five years. Between 1995 and 2000 the Texas Gross State Product has seen an average annual increase of 6.3 percent.[4] The per capita income in Texas for the third quarter of 1999 was $26,060 compared with $25,105 for

1998 and $23,850 in 1997.[5] Personal income is expected to grow at an average of 5.8 percent between 2000 and 2005.[6]

Unemployment in Texas, like the rest of the nation, is at an all time low. The seasonally adjusted unemployment rate in Texas for March 2000 was 4.6 percent.[7] The national rate for the same period was 3.7 percent. Projections from the Texas Comptroller's Office indicate that during the next five years the Texas unemployment rate is expected to increase to about 5.2 percent[8] (Figure 2). While the statewide unemployment rate is very low, some regions of Texas are still experiencing double-digit rates of unemployment. The Texas Workforce Commission March 2000 estimates show that unemployment rates ranged from a low of 2.1 percent in the greater Austin area to a high of 27 percent in Maverick and Starr counties.[9]

Figure 2. Texas Unemployment Rate Fiscal Years 1996-2005



*Projected

Source: Texas Comptroller of Public Accounts: The WEFA Group; Texas State Data Center, Fall 1999.

The North American Free Trade Agreement (NAFTA) continues to have a positive impact on the Texas economy. Texas businesses export more goods to Mexico than any state in the United States. In 1998 Texas businesses exported $36.3 billion worth of goods into Mexico, a 16.5 percent increase over 1997

exports.[10] Estimates suggest that NAFTA has boosted employment associated with exports to Mexico by approximately 90,000 to 160,000 jobs.[11, 12]

Poverty in Texas

Although economic indicators overall suggest a healthy economy for Texas, poverty rates indicate that segments of the population still struggle with scarce financial resources and the increased health risks associated with a lower economic standard of living. The U.S. Department of Health and Human Services' guidelines for 2000 define poverty as having a yearly income of $17,050 for a family of four (add $2,900 for each additional person).[13] According to the U.S. Bureau of the Census, 16.5 percent of Texans lived in poverty in 1999.[14] This is an increase over 1998 when the Texas poverty rate was estimated to be 15.9 percent [15] (Table 2).

Table 2. U.S. Department of Health &Human Services Poverty Guidelines

Size of Family	48 Contiguous States and D.C.	Alaska	Hawaii
1	$ 8,350	$10,430	$9,590
2	$11,250	$14,060	$12,930
3	$14,150	$17,690	$16,270
4	$17,050	$21,320	$19,610
5	$19,950	$24,950	$22,950
6	$22,850	$28,580	$26,290
7	$25,750	$32,210	$29,630
8	$28,650	$35,840	$32,970
For each additional person add:	$2,900	$3,630	$3,340

Source: *Federal Register*, Vol. 65, No. 31, February 15, 2000, pp. 7555-7557.

Guidelines

There remains a significant variation in poverty rates by age, region and ethnicity in Texas. The 17 years and under age group remains proportionately the largest group in poverty. In 1999, while 16.5 percent of the total population was classified as "in poverty," 24 percent of those aged 17 years and under live at or under the poverty level. Just over 16 percent of persons aged 65 years and older live in poverty while 13.3 percent of adults aged 18 to 64 years lived in poverty.[16]

Hispanic and African-American groups continue to represent a disproportionate number of those Texans living under poverty conditions. The latest data available indicate that a higher percentage of African-Americans (25.7 percent) and Hispanics (27.7 percent) than whites (8.1 percent) are living at or below poverty.[17]

Finally, marital status is a clear indicator of poverty status. While 9.5 percent of married persons are living in poverty, 21.8 percent of widowed persons and 20.1 percent of divorced/separated persons are living in poverty. Persons never married have a higher level in poverty at 22.6 percent.[18]

New Federalism

New Federalism is an ideology that continues to be prevalent in national and state policymaking. New Federalism, more recently referred to as devolution, is a strategy to focus decision-making and management of government programs on the state and local levels. Since the days of Franklin D. Roosevelt's New Deal, the federal and state governments have engaged in an often contentious debate over the level of government most appropriate to perform and pay for particular functions. Obviously, all the money derives from the taxpayers. But who manages it has been a source of conflict between the levels of government for many years.[19] The intent of devolution is to enhance the responsiveness and efficiency of the federal system, based on the assumption that state and local governments can do a better job of providing services for citizens.

Two recent national legislative amendments to the Social Security Act – the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) and the State Children's Health Insurance Program (SCHIP), include aspects of devolution and performance-based accountability. Both pieces of legislation represent a shift toward greater flexibility for states in policy development, program design and objective measures of performance. Additionally, legislation from the Balanced Budget Act of 1997 contained other provisions that allowed increased flexibility for states with regard to the Medicaid program. For example, states were given more latitude in setting eligibility policy. Coupled with devolution is an increasing emphasis on accountability for federal and state funds. The Government Performance and Results Act mandates that federally assisted programs establish strategic plans and performance measures in order to measure the effectiveness and efficiency of public support for health and human services programs.

Causes of Death, Disease Trends and Lifestyle Risk Factors

Public health has learned much in the last 30 years about the determinants of health. Our health is shaped by factors in five domains: genetic endowments, socio-cultural circumstances, physical environments, behavioral patterns, and health services. For the majority under the age of 75 years, the most important contributors to health problems are behavioral patterns and socio-cultural circumstances, whereas the impact of medical care or health status seems to surprisingly low. One estimate puts the relative contribution of behavior at 50 percent, genetics at 20 percent, environment (physical and social) at 20 percent, and medical services at 10 percent.[20]

Causes of Death

The five leading causes of death in Texas have remained the same since 1979. In 1998 heart disease claimed 42,713 lives (217 deaths per 100,000 population) followed by malignant neoplasms (cancer) with 32,275 deaths (164 deaths per 100,000 population). Diseases of the heart and malignant neoplasms have been the first and second leading causes of death in Texas and the nation since 1950. Cerebrovascular diseases ranked third with 9,808 deaths (50 deaths per 100,000 population). Fourth was accidents with 7,385 deaths (38 deaths per 100,000) and finally chronic obstructive pulmonary disorders with 6,597 deaths (34 deaths per 100,000 population). [21]

Disease Trends

Data on the consequences of poor diet, smoking, injury, intravenous drug use, and unprotected sex with multiple partners indicates that Texas still struggles to reach goals for a healthy population. Infectious diseases trends continue to pose challenges for public health officials.

More than 51,000 Texans have been diagnosed with acquired immune deficiency syndrome (AIDS) since the epidemic began in the early 1980s. Texas is ranked fourth highest among states in the U.S., reporting 2,868 AIDS cases for 1999. [22]

- Sexually transmitted diseases are not new agents in public health, but data show that certain populations are at greater risk of complications. Congenital syphilis, one of the most serious forms of the disease, may cause abortion, stillbirth, or premature delivery, as well as numerous severe

complications in the infected infant. Reports of chlamydia in 1999 totaled 62,526, a three percent increase from the previous year.[23]

- Varicella (chickenpox) remains the most prevalent vaccine-preventable disease in Texas. In 1994 through 1999, an average of eight deaths per year were attributed to complications of chickenpox.[24]
- Approximately 1,200 new hepatitis B infections are reported in Texas each year. The state is the third in the nation in the expected number of births among women who are infected with hepatitis B.[25]
- In 1999, the state experienced nine cases rubella (German measles).[26]
- Pertussis has continued to infect many children despite high vaccination levels with 148 cases confirmed in 1999.[27]
- Foodborne illnesses continue to be of major concern for Texans just as they are for the nation. Outbreaks, most often due to the consumption of contaminated food caused by poor hygiene among food handlers or raw and undercooked food items, contributed to the increase in the number of infections (estimated in Texas to be in the thousands each year) caused by *Salmonella, Shigella, Vibrio parahaemolyticus, Campylobacter, Hepatitis A, Crypptosporidia, E-coli, and Listeria.* [28]

One of the most notable trends in public health is the increased occurrence and costs related to chronic diseases. More than 90 million Americans live with chronic illnesses.[29] Among the ten leading causes of death among Texans in 1998, six of them were chronic diseases that accounted for nearly 70 percent of deaths in the state.[30,31] The medical care cost of people with chronic diseases now account for more than 60 percent of the nation's medical-care costs. It is projected that by 2020, there will be 39 million people with a chronic condition that limits their ability to go to school, to work or live independently.[32]

Chronic disease also has an excessive impact on minority populations in Texas. The prevalence rate of diabetes among African Americans is about 25 percent higher than among Anglo Americans, and the prevalence among Hispanics is about 40 percent higher than Anglos. African Americans have the highest incidence rates for all cancers combined followed by whites, other races and Hispanics. The five-year survival rate for cancer among African Americans diagnosed during 1986 through 1992 was about 44 percent, compared with 59 percent for Anglo Americans.[33]

Lifestyle Risk Factors

By the early 1980s, scientific research clearly showed that personal health behaviors play a major role in premature death and disease. In many cases, the roots of chronic diseases are grounded in a limited number of health-damaging behaviors practiced by people every day for much of their lives. These behaviors include:

- Lack of physical activity;
- Poor nutrition (e.g., high-fat, low-fiber diets);
- Tobacco use;
- Use of seat belts; and
- Underuse of known prevention strategies, such as immunizations, and screening for breast, cervical, and colorectal cancer.

The choices Texans make about diet, physical activity, substance abuse, smoking, safety, and sexual behavior can raise or reduce the occurrence of these preventable health conditions (Figure 3).[34]

Figure 3. 1999 Behavioral Risk Factor Survey of Texans showed:

- **22.4 percent** were smokers
- **34.1 percent** were overweight
- **22.5 percent** consumed five or more fruits and vegetables per day (1998 data)
- **57.3 percent** had a sedentary lifestyle (1998 data)
- **17.1 percent** were binge drinkers
- **2.8 percent** reported drinking and driving
- **6.2 percent** were ever told they had diabetes
- **18.6 percent** reported their general health as fair to poor (1998 data)
- **15.8 percent** reported their chance of getting HIV was medium to high (1998 data)

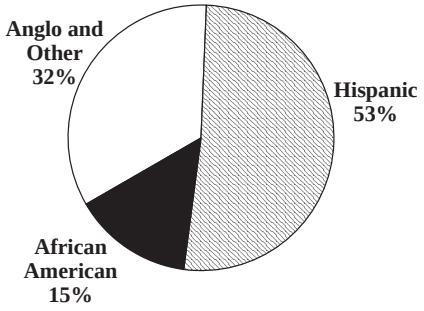
Sources: Texas Department of Health, Behavioral Risk Factor Surveillance System. 1999 Texas data at: www.tdh.state.,tx.us/chronicd/test1.htm

Health Care Insurance

The percentage of people in Texas without health insurance has remained relatively stable for the past three years. The U.S. Bureau of the Census reports that between 1996 and 1998 the percentage of Texans without some type of health insurance has increased only slightly from 24.3 percent to 24.5 percent. Among the 50 states and the District of Columbia, Texas ranks number one in the percentage of the population without health insurance. During the same period, the rate of uninsured nationally increased from 16.0 percent to 16.3 percent.[35]

As of 1998, 57 percent of the 19.9 million people in Texas had private health insurance. Of those with private health insurance, 91 percent had health insurance through their employer and the remaining had private insurance from other sources. Minorities make up a majority of Texas' uninsured. According to the 1998 Current Population Survey, 52.7 percent of the uninsured are of Hispanic origin, 15.2 percent were African-American and 32.1 percent of the uninsured were classified as White and Other [36] (Figure 4). A study by the Texas Comptroller's Office indicates that roughly $4,300 was spent on each uninsured Texan in 1998.

Figure 4. Texas Uninsured by Ethnicity, 1998



Source: 1998 Current Population Survey

Of the approximate 4.8 million Texans without health insurance, it is estimated that 1.4 million are below the age of 18.[37] Texas is using a three-fold strategy to address this issue. The first took place in 1999 when Medicaid expanded coverage to all children under the age of 18 up to 100 percent of the federal poverty level. It is estimated that this will remove approximately 400,000 children from the ranks of the uninsured.[38]

The second strategy is the creation of the federal Children's Health Insurance Program that offers states matching funds to expand health insurance for children in families with incomes at, or under, 200 percent of the federal poverty level. Premium rates for participation in this program will run between $15 and $18 a month. In Texas, the 1999 matching rate will permit the state to receive $2.81 in federal funds for every one dollar in state spending. There is estimated to be approximately 500,000 children eligible for this program.[39]

The third line of attack is the Texas Healthy Kids Corporation. This is a conventional insurance program aimed at the children of families who are above 200 percent of the federal poverty level. Premiums for this program range between $60 and $80 per month, depending on the county. This program is expected to reach the remaining children that are still uninsured.[40]

Business Trends in Health Care

As consumers continue to become more informed and participatory in their healthcare, they place greater demands on the industry for choice, quality, and accountability. Overwhelmingly, the evidence points to the following issues as modest expectations from the health care industry in the years ahead:

- As communicable diseases pose new threats to the public's health, new community health coalitions will link HMOs, providers, and public health agencies to address health threats and expand prevention activities;
- Price competition among health plans will continue, premiums will rise higher than the consumer price index, and purchasers and consumers will demand more accountability from managed care;
- There will be greater sharing of cost risks;
- Providers will enhance the care management component of health care (case management, inpatient protocols and community education) and focus more resources on improving patient satisfaction;
- There will be a shift to providing service in outpatient settings and outsourcing of key functions by hospitals;
- Physician organizations will consolidate their control of medical practices with fewer physicians electing to remain in solo practice;
- Capitation and other forms of provider risk-sharing arrangements will become the dominant form of provider payment by HMOs and insurers;
- Expansion of Medicaid managed care in Texas will depend on the success of the pilot programs;
- Federal and state legislation will encourage employer purchasing coalitions and state sponsored purchasing pools;
- A patients' bill of rights may be enacted at the federal and state levels;
- There will be an increase in the information collected, enabling providers to use data to report outcomes, patient satisfaction and quality of care; and
- We will see greater use of performance report cards using Health Plan Employer Data and Information Set (HEDIS) data and consumer satisfaction surveys.[41]

Integration of health care, technology, demand for lower costs by payers, patient convenience and higher patient satisfactions have resulted in shift from inpatient to outpatient care. Nationally, average inpatient census has declined. Inpatient utilization has remained relatively constant in Texas, even though the state's population increased by nearly 18 percent between 1990 and 1999. Texas had 472 acute care hospitals with approximately 72,000 beds as of December 1999. While inpatient days fluctuated around 12 million days with a marginal decline of two percent, non-emergency outpatient visits increased by 228 percent from 6.4 million visits in 1988 to 21.0 million visits in 1998. Emergency room visits increased by 56 percent from 4.3 million visits in 1988 to 6.7 million visits in 1998 (Table 3). Average length of stay declined from 6.3 days in 1988 to 5.4 days in 1998 and average occupancy rate remained around 56 percent. The utilization rate per 1,000 population declined from 713 inpatient days in 1988 to 610 inpatient days in 1998.[42]

According to the Texas Deparment of Insurance, 32 of the 51 HMOs operating in Texas lost money in 1998. Hospitals reported profit margins of 14.3 percent in 1995, 10.5 percent in 1996 and 9.7 percent in 1997, over one-third higher than the aggregate profit margins for hospitals nationwide. The profit margins declined to eight percent in 1998 and are expected to decline further in view of the cuts in Medicare payments under the Federal Balanced Budget Act of 1997. In 1999, nine hospitals closed compared to 16 hospital closures in 1990.[43]

Table 3. Acute Care Hospital Utilization in Texas

Year	Inpatient Days (millions)	Outpatient Visits* (millions)	Emergency Room Visits (millions)
1988	12.3	6.4	4.3
1989	12.2	7	4.5
1990	12.2	8	4.7
1991	12	8.5	5.1
1992	11.9	10.3	5.5
1993	11.5	12	5.8
1994	11.1	13.8	6
1995	10.9	15.7	6.2
1996	11.5	18.2	6.2
1997	11.8	20.2	6.4
1998	12.1	21	6.7

* Excludes emergency room visits

Source: Texas Department of Health, 1988-1998 Cooperative TDH/AHA/THA Annual Survey of Hospitals.

The pace of major mergers and merger-like partnerships among Texas hospitals and hospital systems accelerated during 1995 through 1999.[44] Pending hospital mergers may make it even more difficult for HMOs to play one hospital against another for discounts and hospitals with large

market shares will be better able to bargain for favorable rates. Hospital consolidations create potential benefits for consumers toward better geographic access and possible improvements in quality and data reporting. There is a danger, however, of HMOs passing on the higher reimbursement rates from hospitals to consumers in the form of higher premiums.

Texas is the only state that allows patients in employer-paid plans to sue their HMOs. The 1997 legislature also created a "prudent layperson" standard for emergency care, prohibited physician-contract gag clauses and required plans to tighten confidentiality. Large physician groups have also played a significant role by taking actions such as not renewing their contracts with HMO.

The long-term direction of managed care depends largely on the political forces surrounding it. At both the state and national levels, a number of organizations are trying to determine whether managed care really works – does it improve access and does it save money? Under Medicare and Medicaid, managed care has experienced setbacks as some health maintenance organizations have decided to get out of the government-sponsored health care business. Factors such as state funding amounts and methods, the mandated benefits package, provider capacity requirements, administrative demands, data reporting requirements and general fiduciary demands can all weigh into an HMO's decision on whether to continue providing services under the program.

Health Care Workforce

The health care workforce is the backbone of the health care delivery system. The factors that determine the demand for health care services and the subsequent demand for health care professionals include statewide demographics and disease trends; the nature of health insurance coverage; and individual consumer expectations of care. Factors that influence the supply of the workforce include:

- recruitment and retention issues;
- educational admission policies;
- scope of practice;
- use of nonphysician primary care providers;
- maldistribution of health care workers;
- underrepresentation of minorities in health care professions; and
- increased production and use of allied health providers.[45]

The Texas Workforce Commission statistics indicate that there were 637,050 people working in the health care industry in Texas in 1998. The health care workers providing direct care (physicians, nurses and allied health workers) totaled 458,750 in 1996 and the demand is expected to increase to 607,100 in the year 2006. The Texas Workforce Commission projections indicate that the need for therapists (physical, occupational, and speech), health technicians, technologists and other allied health professionals will grow from an estimated 308,250 in 1996 to 423,400 in the year 2006. [46]

The Health Care Financing Administration (HCFA) is in the process of implementing a longterm strategy to change the focus of the way quality health care is defined and measured. HCFA's goal is to improve the quality of care given by Medicare providers through the introduction of information-driven quality assessment tools. These tools include automated data systems designed to generate information to complement and enhance the quality of enforcement surveys. This automated information will help guide continuing efforts to measure the impact of HCFA's policies and regulations on the health of beneficiary populations.

Rapid Growth and Advances in Medical/Health Technology

New advances in information, communication, and biomedical technologies continue to emerge at an astounding pace. The various health applications of new information technology include electronic medical records or "smart cards" which contain an individual's personal health care data; computerized clinical care guidelines; standards and decision making tools; automated billing; provider and patient education; consumer health education via the Internet; and telemedicine consultation between practitioners or between practitioner and patient.

Telemedicine has the potential to make a difference in the lives of many Texans. In remote areas, where a patient and the closest health professional can be miles apart, telemedicine can mean access to health care where little had been available before. According to the *Telemedicine Report to Congress*, the U.S. Department of Commerce states that the current lack of payment for telemedicine services is considered to be one of the major barriers to widespread use. The report predicts that as technology improves, services such as dermatology, digitized mammograms, neurosurgery and pathology are all likely to be considered for

Medicaid coverage.[47] States that have implemented telemedicine coverage under Medicaid (only ten at the time of the report) have generally limited the service to radiology and interactive video consultations.

In 1997, the Texas Legislature passed House Bill (HB) 2017 and HB 2386, requiring Medicaid coverage of telemedicine consultations. The Health and Human Services Commission adopted limited rules in August 1998. Currently, physicians and advance practice nurses in rural or underserved areas are allowed to bill for an office visit. Telecommunication hub site providers, physicians who provide consultation and diagnosis, must be located at a hospital, teaching hospital, tertiary center, or health clinic affiliated with an accredited medical or osteopathic school in Texas.[48]

The Council on Licensure, Enforcement and Regulation states that the issues related to telemedicine will become more and more political. While the technology has the potential to transform that way segments of the population receive health care, detractors are concerned about the elimination of face-to-face contact, the security of information, and the risks of fraud and malpractice.[49] The 10th Council on Graduate Medical Education report recommends that states address the following issues for successful implementation of telemedicine:

- Codify, standardize, and evaluate those experimental and practical applications that exist;
- Resolve professional licensure regulations, especially the issue of reciprocity for the practice of medicine across state lines;
- Establish clear protocols and a unified technological infrastructure to reduce costs and provide rural practitioners with options for communicating with multiple providers; and
- Establish reasonable standards for reimbursement for those providing medical services at a distance.

Bioterrorism

In addition to meeting the continuing threat of new and reemerging infectious diseases, public health officials must also prepare for the possible use of infectious agents as weapons by terrorists to further personal or political agendas. The threat of bioterrorism, long ignored and denied, has heightened over the past few years because of terrorist attacks. Two candidate agents are of special concern: smallpox

and anthrax. Efforts in the United States to deal with possible incidents involving bioweapons in the civilian sector have only recently begun.[50] Texas is in the process of developing a bioterrorism plan and has received funding from the Centers for Disease Control and Prevention to implement a health alert network which will activate local, state and national resources via a telecommunications system.

Implications for a Healthy Public Health System

The health of Texas has improved dramatically in this century. An infant's chance of surviving her first year of life — and then living on to the age of seventy — has increased remarkably. We no longer fear paralysis by polio, or the ravages of yellow fever. This progress is a result of public health action. The methods that public health practitioners have used to improve health are sometimes extraordinary, like the development of vaccines, but they are usually mundane. Improved sanitation and housing, sewage treatment and insect control, safer food and water, safer workplaces, licensed health workers and facilities, health education are all part of the quiet triumph of public health.

Now, at the beginning of the 21st century, how will we build on the public health successes of this past century? Historically, the concerns of public health have shifted as new problems are perceived, and our responses have drawn from a foundation of science, social values, and political will. The vocabulary of public health is more expansive than ever. We still concern ourselves with *disease* and *death*, but we include concepts like *economic disparity, rights, diversity, culture, genetic reengineering, violence, personal responsibility, behavior, business, wellness, information technology, community development, provider,* and *choice.* Despite both subtle and major shifts in social values, the basic societal expectations and the explicit mandates that have come to define public health over the last century are still with us.

State and local public health agencies in Texas are responsible for disease surveillance and control, protection against environmental hazards, health promotion, injury prevention, response to health threatening disasters, and assurance of quality in health care facilities and practitioners. We are still responsible for addressing the direct health care needs of medically indigent individuals. At the same time, the more we understand about the complexity of health, the more public

health practice is compelled to explore and act in other dimensions of health improvement. Today's complex health problems and their tangle of determinants suggest a multitude of possible approaches.

Public Health Challenges

Public health in Texas finds itself with a series of challenges.

- We know from experience that disease control, sanitation, health education, and general hygiene have together earned Texas major improvements in health and increases in longevity over the last century, and we know that continued efforts are necessary to build up and maintain our capabilities in performing the core public health functions.
- Our large proportion of citizens with no health care insurance requires us to stretch a health care safety net of individual services for the most vulnerable in our state.
- Our observations of the determinants of health and the nature of the health problems that pose the greatest threat to us now suggest that the next wave of impact in improving health status will depend on a new tool: gaining a better understanding of the social and community dynamics underlying health.

But we struggle with often-isolated fragments of a categorical public health system created by an array of separate federal and state mandates, and a finite set of resources with which to meet expectations.

Throughout this chapter we have discussed the economic, social, political, technological and environmental changes taking place in public health and health care systems. Some of these changes are evidenced in an increased emphasis on strengthening the capabilities of the public health systems and on continuing to build a focus on health at the community level. The success of public health efforts depends on foresight, planning and the cooperation of public health entities at all levels. In the next chapter we will look at the agency's capacity to leverage resources to create a healthy public health system to meet the challenges we face.

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